

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A system for self-authenticating a first end-user connected to a common network of a third party and a second end-user connected to the common network, the first end-user being a customer of a first service provider of multiple service providers and the second end-user being a customer of a second service provider of multiple service providers, comprising:

a digital repository populated with
service provider entries including information about the first service provider
and other information about the second service provider,

end-user entries including information about the first end-user and other
information about the second end-user, each of the end-user entries being associated with at
least one service provider entry, and

service description entries including information about a level of service
purchased by an end-user from a service provider, each of the service description entries
being associated with an end-user entry;

a processor; and

a computer readable medium encoded with processor readable instructions that when
executed by the processor implement,

a new device detection mechanism configured to detect a new device
connected to the common network, the new device being associated with one of the first end-
user and the second end-user,

a bandwidth allocation mechanism configured to allocate limited bandwidth on the common network to the new device and to provide access to an end-user authentication mechanism,

the end-user authentication mechanism configured to obtain identification information from the one of the first end-user and the second end-user,

a service determination mechanism configured to query the digital repository to determine the level of service purchased by the one of the first end-user and the second end-user from a respective one of the multiple service providers based on information obtained by the end-user authentication mechanism,

a service allocation mechanism configured to provide the level of service purchased to the one of the first end-user and the second end-user authenticated by the end-user authentication mechanism,

a customer billing mechanism configured to establish and maintain billing information in the digital repository for the third party by establishing a relationship between the one of the first end-user and the second end-user and the respective one of the multiple service providers and to generate a bill for the respective one of the multiple service providers based on usage of the common network by the one of the first end-user and the second end-user.

Claim 2 (Original): The system of Claim 1, wherein the digital repository comprises a database.

Claim 3 (Original): The system of Claim 1, wherein the common network comprises a network dedicated to broadband data transport services.

Claim 4 (Original): The system of Claim 3, wherein the data transport services comprise at least one of Internet access, voice over IP, and video on demand.

Claim 5 (Original): The system of Claim 1, wherein the common network comprises an open access network.

Claim 6 (Original): The system of Claim 1, wherein at least a portion of the common network comprises an Internet protocol network.

Claim 7 (Original): The system of Claim 1, wherein at least a portion of the common network comprises a hybrid fiber optic coaxial network.

Claim 8 (Original): The system of Claim 1, wherein at least one of the multiple service providers comprises an Internet service provider.

Claim 9 (Original): The system of Claim 1, wherein at least a portion of the common network comprises a Data Over Cable Service Interface Specification network.

Claim 10 (Original): The system of Claim 1, wherein at least a portion of the common network comprises a European Data Over Cable Service Interface Specification network.

Claim 11 (Original): The system of Claim 1, wherein the bandwidth allocation mechanism is further configured to direct an end-user to the end-user authentication mechanism using a wildcard Domain Name System technique to resolve an end-user Domain

Name System address resolution request to an IP address of the end-user authentication mechanism.

Claim 12 (Original): The system of Claim 1, wherein the bandwidth allocation mechanism is further configured to use a policy-based routing to direct an end-user to the end-user authentication mechanism.

Claim 13 (Original): The system of Claim 1, wherein the bandwidth allocation mechanism is further configured to use at least one of a Layer Two Tunneling Protocol and policy-based routing to direct an end-user to the end-user authentication mechanism.

Claim 14 (Original): The system of Claim 1 wherein the bandwidth allocation mechanism is further configured to set IP address filters at an end-user device to block addresses other than an IP address of the end-user authentication mechanism.

Claim 15 (Currently Amended): A method for self-authenticating a first end-user connected to a common network of a third party and a second end-user connected to the common network, the first end-user being a customer of a first service provider of multiple service providers and the second end-user being a customer of a second service provider of multiple service providers, comprising:

populating a digital repository with
service provider entries including information about the first service provider
and other information about the second service provider,

end-user entries including information about the first end-user and other information about the second end-user, each of the end-user entries being associated with at least one service provider entry, and

service description entries including information about a level of service purchased by an end-user, each of the service description entries being associated with an end-user entry;

detecting a new device connected to the common network, the new device being associated with one of the first end-user and the second end-user;

allocating limited bandwidth on the common network to the new device to provide access to an end-user authentication mechanism;

authenticating the one of the first end-user and the second end-user via the end-user authentication mechanism;

querying the digital repository to determine the level of service purchased by the one of the first end-user and the second end-user from a respective one of the multiple service providers based on information obtained in the obtaining step; and

providing the level of service purchased to the one of the first end-user and the second end-user authenticated in the authenticating step;

establishing a relationship between the one of the first end-user and the second end-user and the respective one of the multiple service providers in the digital repository; and

generating a bill by the third party for the respective one of the multiple service providers based on usage of the common network by the one of the first end-user and the second end-user.

Claim 16 (Original): The method of Claim 15, wherein the common network comprises a network dedicated to broadband data transport services.

Claim 17 (Original): The method of Claim 16, wherein the data transport services comprise at least one of Internet access, voice over IP, and video on demand.

Claim 18 (Original): The method of Claim 15, wherein the common network comprises an open access network.

Claim 19 (Original): The method of Claim 15, wherein at least a portion of the common network comprises an Internet protocol network.

Claim 20 (Original): The method of Claim 15, wherein at least a portion of the common network comprises a hybrid fiber optic coaxial network.

Claim 21 (Original): The method of Claim 15, wherein at least one of the multiple service providers comprises an Internet service provider.

Claim 22 (Original): The method of Claim 15, wherein at least a portion of the common network comprises a Data Over Cable Service Interface Specification network.

Claim 23 (Original): The method of Claim 15, wherein at least a portion of the common network comprises a European Data Over Cable Service Interface Specification network.

Claim 24 (Currently Amended): A system for self-authenticating a first end-user connected to a common network of a third party and a second end-user connected to the

common network, the first end-user being a customer of a first service provider of multiple service providers and the second end-user being a customer of a second service provider of multiple service providers, comprising:

means for populating a digital repository with

service provider entries including information about the first service provider and other information about the second service provider,

end-user entries including information about the first end-user and other information about the second end-user, each of the end-user entries being associated with at least one service provider entry, and

service description entries including information about a level of service purchased by an end-user, each of the service description entries being associated with an end-user entry;

means for detecting a new device connected to the common network, the new device being associated with one of the first end-user and the second end-user;

means for allocating limited bandwidth on the common network to the new device and providing access to an end-user authenticating means;

means for authenticating the one of the first end-user and the second end;

means for querying the digital repository to determine the level of service purchased by the one of the first end-user and the second end-user from a respective one of the multiple service providers based on information obtained by the means for authenticating; and

means for providing the level of service purchased to the one of the first end-user and the second end-user authenticated by the means for authenticating;

means for establishing a relationship between the one of the first end-user and the second end-user and the respective one of the multiple service providers in the digital repository; and

means for generating a bill by the third party for the respective one of the multiple service providers based on usage of the common network by the one of the first end-user and the second end-user.

Claim 25 (Currently Amended): A computer program product, comprising:

a computer storage medium; and

a computer program code mechanism embedded in the computer storage medium for causing a processor to self-authenticate a first end-user connected to a common network of a third party and a second end-user connected to the common network, the first end-user being a customer of a first service provider of multiple service providers and the second end-user being a customer of a second service provider of multiple service providers, the computer program code mechanism having,

a first computer code device configured to maintain service provider information, end-user information, and service description information in a database,

the service provider information including information about the first service provider and other information about the second service provider,

the end-user information including information about the first end-user and other information about the second end-user and including an association between each end-user and at least one service providers, and

the service description information including information about a level of service purchased by an end-user, and an association with an end-user;

a second computer code device configured to detect a new device connected to the common network, the new device being associated with one of the first end-user and the second end-user;

a third computer code device configured to allocate limited bandwidth on the common network to the new device and to provide access to a fourth computer code device;

the fourth computer code device configured to authenticate an end-user based on identification information obtained from the one of the first end-user and the second end-user;

a fifth computer code device configured to query the database to determine the level of service purchased by the one of the first end-user and the second end-user from a respective one of the multiple service providers based on information obtained by the fourth computer code device; ~~and~~

a sixth computer code device configured to provide the level of service purchased to the one of the first end-user and the second end-user; and

a seventh computer code device configured to establish and maintain billing information in the digital repository for the third party by establishing a relationship between the one of the first end-user and the second end-user and the respective one of the multiple service providers and to generate a bill for the respective one of the multiple service providers based on usage of the common network by the one of the first end-user and the second end-user.

Claim 26 (Original): The computer program product of Claim 25, wherein the common network comprises a network dedicated to broadband data transport services.

Claim 27 (Original): The computer program product of Claim 26, wherein the data transport services comprise at least one of Internet access, voice over IP, and video on demand.

Claim 28 (Original): The computer program product of Claim 25, wherein the common network comprises an open access network.

Claim 29 (Original): The computer program product of Claim 25, wherein at least a portion of the common network comprises an Internet protocol network.

Claim 30 (Original): The computer program product of Claim 25, wherein at least a portion of the common network as a hybrid fiber optic coaxial network.

Claim 31 (Original): The computer program product of Claim 25, wherein at least one of the multiple service providers comprises an Internet service provider.

Claim 32 (Original): The computer program product of Claim 25, wherein at least a portion of the common network comprises a Data Over Cable Service Interface Specification network.

Claim 33 (Original): The computer program product of Claim 25, wherein at least a portion of the common network comprises a European Data Over Cable Service Interface Specification network.

Claim 34 (Original): The computer program product of Claim 25, wherein the third computer code device is further configured to direct an end-user to the end-user authentication mechanism using a wildcard Domain Name System technique to resolve an end-user Domain Name System address resolution request to an IP address of the fourth computer code device.

Claim 35 (Original): The computer program product of Claim 25, wherein the third computer code device is further configured to use policy-based routing to direct an end-user to the fourth computer code device.

Claim 36 (Original): The computer program product of Claim 25, wherein the third computer code device is further configured to use at least one of a Layer Two Tunneling Protocol and policy-based routing to direct an end-user to the fourth computer code device.

Claim 37 (Original): The computer program product of Claim 25 wherein the third computer code device is further configured to set IP address filters at an end-user device to block addresses other than an IP address of the fourth computer code device.

Claim 38 (Currently Amended): A method for self-authenticating a first end-user connected to a common network of a third party and a second end-user connected to the common network, the first end-user being a customer of a first service provider of multiple service providers and the second end-user being a customer of a second service provider of multiple service providers, comprising the steps of:

- detecting a new device connected to the common network;
- granting a limited bandwidth on the common network to the new device;
- authenticating one of the first end-user and the second end-user of the new device through an application accessible over the limited bandwidth;
- determining a level of service purchased from a respective one of the first service provider and the second service provider by the one of the first end-user and the second end-user identified in the authenticating step; and

providing the level of service purchased on the common network to the one of the first end-user and the second end-user;

establishing a relationship between the one of the first end-user and the second end-user and the respective one of the multiple service providers in a digital repository of the third party; and

generating a bill by the third party for the respective one of the multiple service providers based on usage of the common network by the one of the first end-user and the second end-user.